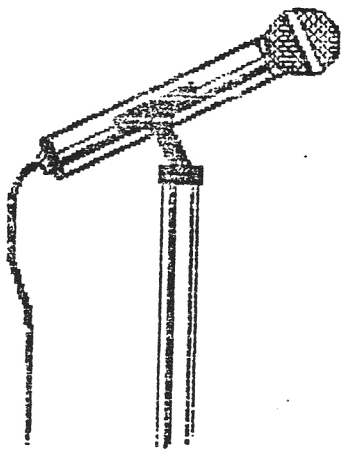
Oct/Nov

THE RAMTOP™

1988

Published By The Greater Cleveland Sinclair/Timex/Generic Computer Users Group



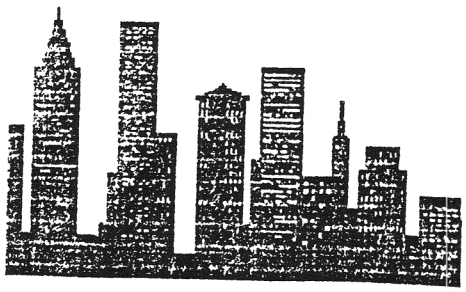
This Month: An Exploration Into *Midi!*

Club Notes: TSU BBS goes back online 10/22 (216)-327-1099

Annual Christmas party/auction to be held at the December East Side meeting.

East Side Group meets at The Euclid Square Mall
In the Euclidian Room 7:30 PM
Every first Friday each month
Contact: Max Schoenfeld (216)-371-1096

West Side Group meets at Lakewood Public Library
15425 Detroit Ave. Lakewood Ohio 7:00 PM
Every third Friday each month
Contact: Dick Sieg (216)-433-4387



A short note to our friends from other newsletters and magazines. You are welcome to use any of our material, news, adds, or programs if YOU: 1) Tell where it came from (RAMTOP Cleveland, Ohio) and 2) The author's name that wrote the article. We would appreciate it if you would send us a copy of the newsletter that it appeared in! We will do the same.

ANNOUNCEMENTS

NOVEMBER:

Be sure to attend the WEST SIDE meeting! Our own Chris Raynak will give a demo on MIDI. Be sure to read his very well written article on this confusing but interesting subject. I know that I will be there!

DECEMBER:

We will have our annual Christmas party and Auction at the EAST SIDE meeting. We will also elect new officers for President and East side Vice President.

There is an ad in the Nov. or Dec issue of Radio-Electronics magazine for ZX-81 kits (NEW) at a price of $49.95.

Our Treasurer Bob Parish, is trying to start a nation wide user group called: THE GREAT AMERICAN SINCLAIR USER GROUP. For now it is somewhat resticted to those who have and USE a modem but as Bob tells me, one must crawl before they can walk. Please call TIMELINES BBS for further information. 216-671-6922 Call between 10PM & 6AM EST. Bob wanted me to also tell you that he has a good terminal program for the QL on his BBS that you can download.

Nov/Dec Editorial

I would you all to know that we DO support ALL Sinclair and Timex computers! This includes the Z-88. The reason you don't see a lot of articles other than 2068 and QL is because NO ONE HAS SENT ANY ARTICLES ON THEM! We would very much like to have articles on EVERY Sinclair type computer but we also feel that we want to limit copying articles from other newsletters. We have a vast talent right here and I hope that we will get more articles for the newsletter!

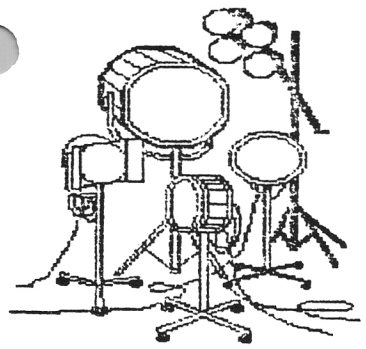
We have decided to expand our west sid meeting to include subject matter that wil include other types of computers. This is a effort to help those of us that have o types of computers in addition to Sinclair/Timex computers. We want to kee this primarily to generic subject matter an not just one type of computer. This shoul help us learn how to transfer data and othe subjects. The preliminary plan is to have short discussion then break up into smalle groups as needed.

WE NEED PEOPLE TO GIVE DEMOS AND SHOR SEMINARS AT OUR MEETINGS! Are you good a programing or hardware? What about dis drives or interfaces? For that matter, almos any computer related subject. We can al learn from your experience! If you have subject you can speak on or a demo, give me call! 216-661-4105.

We of the GREATER CLEVELAND SINCLAIR USE GROUP would like to wish you ALL a ver joyous Holiday Season! We hope to have another RAMTOP issue out at the beginning o 1989. I hope to have some good programs i it. How about sending a program!

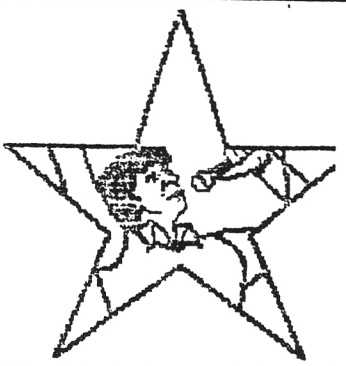
At our last East Side meeting, I was given pages written by Bill Jones from UPD Although I don't have room to publish it i the RAMTOP, it is available to you or TIMELINES. I will give a short over view. Most of the article delt with doubts about SNUG and a possible better way to form a national user group. It also had some interesting numbers. How many of you thought there were 100,000 or more sinclair computers in use in North America? I thought there was a much lower number but the facts are: Under 1500 ACTIVE 2068 users. Of these, about 80 have disk drives. There are 300 or less 100 users. There are between 5000 and 7000 QL users. Of these, about 1/2 are 2068ers that have moved on to the QL. The other half are new to Sinclair. Bill feels there is much room for hope. This lies in more QLs sold and at least 20,000 Z-88 computers sold in 1989. It is also very likely that an updated version of the QL (with 3 1/2" drives) will be produced and sold.

Bill goes on to say that if we are to servive as active Sinclair Groups, We will have to recruit the QL users and especially the new Z-88 users and find common interests. I k that I am certainly willing to accept a users of QLs or Z-88. I saw the Z-88 at our Conference. I was impressed with it. It has many advantages over other laptops. It has the quietest keyboard that I have seen on any computer while it is still very easy to type on.



The World of *Midi!*

By Christopher Raynak



The world of computers is strange. Just when you think you have seen it all, when you think you have finally gotten that last piece of elusive hardware that will make your dream system complete, the vendors ruin it all and come out with something new! Such is the case with music and computers.

A few of you will remember when you had your ZX80 and were exstatic the only thing that could complete your dream machine was sound! A few more of you will remember when the first Quicksilva SND boards came out how overjoyed we were to have sound and yes, not less than 3 voices! The same sound chip that was used in the Quicksilva board was also used in the 2068 and spectrum. Yet with all this power there was still a nagging for something more. Packages were introduced to direct these sound devices, such as Cana software's music drive or the Janice Music program. With the advent of the QL we expected even much more, but were let down with a simple buzzer for a sound device. That is until now.....

Midi Today

It never ceases to amaze me how articles can have an absolutly perfect title, yet never really get around to anything specific about the topic they claim to use! This has widely been the case with MIDI. Ocassionally someone will tell you what it is, and even more rare is to get an explaination of how it works. So let me give it a shot and you be the judge...

What is Midi?

Midi stands for **M**usical **I**nstument **D**igital **I**nterface. It is an international standard that is used for communications between instruments, computers, recorders and sequencers. On the back of most computers that handle interfaces, you will usually find a MIDI OUT port. Some even have a MIDI IN port, and a few even have a MIDI THROUGH port. The defacto standard cable has been a serial 5 pin din connector with the following connections:

Pin Function Midi OUT

1 - THRU Transmit Data *
2 - Shield Ground
3 - THRU Loop Return *
4 - OUT Transmit Data
5 - OUT Loop Return

Pin Function Midi IN

1 - Not Commected
2 - Not Connected
3 - Not Connected
4 - IN Receive Data
5 - IN Loop Return

(* Not used on all computer systems or instruments)

For each Transmit/Thru/Receive wire you have, you also have a return loop wire, which acts as a ground reference (comparable to RS232 Signal Ground). Usually midi data is transmitted on 16 *channels* at an extremely high baud rate (faster than 9600 Bps) in a daisy chain fashion, to a number of devices.

Channels

The reason there are usually only 16 channels, is because of the way the midi ports are daisy chained out. What I mean by *chaining* is a connection in this manor:

Computer-keyboard-drums

Each device in the chain is protected by an optoisolator which isolates them from each other to prevent you for loosing big bucks worth of equipment if one component should decide to go bad. This isolation is super, but tends to create a lag of so many milliseconds which builds per device, so if you get too far beyond 16 you start to get a *ripple* effect from your instruments. When a midi device, such as a computer, sends information to another device, such as a keyboard, it sends the info on one or more midi channels. A channel is an ID code number followed by data and a terminator as follows:

ID/DATA/END

For multiple channels the format would look like this:

ID/DATA/END/ID/DATA/END

The receiving device looks for a particular ID and then accepts the data for that ID only. If the device has a Midi Thru port it sends the data on. Most do not. If it has an OUT port it will sometimes act as an OUT. Data could be change an instrument or change a note or even release sustain. But we are getting ahead of curselves.

This is all looking from a computer stand point of things, to which we are accustom. If you think you can go out and buy a keyboard now thinking you have the knowledge to use it read on, the next section is very help full!

Confusing terminology

Since my first encounter with Midi, I have yet to find two manufacturers or even two manuals from the same manufacturer that agree. I guess the main reason for this is due to the fact that these manuals were written by typists and not computer people. We are use to calling multiple sound producing channels *voices* (such as the three voice 2068 sound chip). But manufactures sometime use voices as instruments, or notes or sometimes totally confuse the two in the same manual! They also like to speak of instruments as multitimbre or polyphonic but never really explain these and usually mix them up as well, so, for the record here is what they actually are:

multitimbre- having a distinct sound or sounds of different instruments.
(multiple voices in our case)

Polyphonic- having multiple sounds as in harmonys on a piano.
(multiple notes)

Melody- primary voice(or voices) which stand out above the cords and rhythm.

Cords- fill in voice (or voices) usually behind the melody.

rhythm- Bass voice (or voices) which are behind both melody and cords.

percussion- percoussion instruments

PCM vs. FM

Most synths that are out have been of the digital variety. That means that they produce their sounds exactly they same way our 2068 sound chips do, but with much more refinement. Until reciently these FM (frequency modulated) keyboards were too expensive to be owned by the average tinkerer that just wanted to use a keyboard with a midi source such as a computer. The cheaper ones that were on the market were very poor in quality and sound. To make up for this, CASIO, a keyboard manufacturer, introduced the PCM system for their synths. PCM- Pulse Code Modulation is a different system entirely. Instead of simulating the sounds with FM, they actually sampled a real instrument, for example a piano, recorder each note in a ROM and then simply recall that note when you press a key on the synth your playing. It really does sound very good. However PCM and Midi do not really go hand in hand, and FM is having a come back the reason for this is explained later.

A basic Keyboard.....

Your basic synth is a single channel (most manufacturers like to call this monophonic) keyboard with a Midi in port. It will play music in the format: ID/data/end. Most of the early synths, such as the DX7, were like this, and you had to manually tell them NOT to accept data on more than ONE midi channel. Otherwise they would try to play that as well! Some synths didn't even have this ability so you were stuck with 1 keyboard only. The basic synths also only had 20 instruments and most still do today.

Basic keyboards today....

Today your basic synth has 20 instruments and 3 midi channels: Melody/Cord/Rhythm. Usually to get the full response out of it you have to attach the synth to an amplifier or else you usually loose the bass in the background. With these three channels you can send a variety of data out over the midi. For example:

ch1\piano,note c third octive\end\ch2\ piano, cord e\end\ch3\piano, bass note c\ end

This is the perfect midi data, no instrument changes, no conflicts. Where you run into problems is when you try to do something like this:

ch1\piano, note c\end\ch1\harp, note b\end

With the FM synth the change would be smooth, but with a PCM synth, you would more than likely get a sharp cut off of the first instrument. This is due to the way the sound is produced and the decay rate of each instrument in the PCM chip. Another problem with PCM synths is the lack of *most* to play different instruments at the same time. They usually end up playing with the primary (melody) instruments "sound" such as a piano. If everyone had this format of keyboard, life would be grand, but unfortunately, they do not. In fact, the good music is usually played and recorded on midi synths that have 5 or more channels used with at least 4 different instruments simultaneosly playing, so you can see where you run into trouble. If you redirect some of the data from these other channels it sometimes helps, such as sending bass on channel 4 to channel 3 along with channel 3 bass. But this usually has the effect of overrunning the keyboards maximum note handling ablility for that channel (polyphonic limit). How do you change or redirect such data?

Well, most software packages now a days give you the ablility to select this, such as the format below:

Instrument	Channel	INSTR#	Range
Piano	1	1	0-60
harp	2	8	12-72
bells	3	9	12-72
bass guitar	3	2	0-60

The instrument title is given for you only, and is not used by the instrument, it only uses the instrument #. The range defines what octives the instrument will cover. Some will only run over specific ranges, clipping or not playing above or below, while others will approximate and use the same range for a variety of octive scales. Basically, a midi set up is only as good as the driver software that supports it. To date, no QL midi was available for testing, so I cannot tell you how good it would be. But it must be at least half as good as Atari's ST models have. They can play and record in a variety of ways playing at least 32 songs simultaneously with different channels on different synths with no problem. But I am not here to promote or denote one computer midi set up, only to give the facts. Now for an overview on a couple of keyboards, and a few last words of warning to you would be synth buyers.....

Casio HT700

The Casio HT700 is about middle of the road for PCM synths. It has 3 channels, 20 primary instruments and 20 internal instruments which you can edit. You can create your own drums, but they usually don't conform to anything on the midi drivers. It plays all three channels as its primary instrument voice (sound) and has a midi IN and OUT port. The OUT port only functions when you play on the keyboard itself, it does not function as a THRU port. The price of the HT700 is about $450.00.

The HT700 also has a pitch bender, and the pitch bender is accessible through the midi port. Casio gives a midi chart which takes some decifering, but is readable with time and this articles information. The edited internal voices (instruments) can be saved on a Casio RAMcard but if you do not have one it will loose the memory as soon as you remove both batteries and AC. The HT was my first synth and I still really enjoy it, But as usual a new synth came out.....

Yamaha PSS-480

The 480 is about the best synth I have seen on the market for the price (authors note: Works in retail with keyboards). It has 16 midi channels instead of 3 with 15 of those dedicated to melody, cords, and bass in recurring groups of three and the 16th channel being used for 9 percussion instruments. Casio also has a newer PCM machine with a percussion instrument setting, but they do not correspond to any current drum machine. The 480's drum machine responds to the same range as that of both an RX-10 and an Akai drum machine, both of which run well over $200.00. The way a percussion instrument is played is different than an instrument on a keyboard. The note that is selected determines which percussion instrument will be struck rather than a note on say, a piano. So if you hit a middle e it might be a bass drum. The PSS-480 uses PCM for the drum machine and FM for the other instruments. It is a 9 multitimbre (instrument), 19 polyphonic (19 note) simultaneous synth. This means you can simultaneously play up to 19 notes on up to 9 different instruments over a 6 octive range. If you try to play more than that the 480 puts both the instrument change (if any) and the note in a memory register that corresponds to that channel until the next available space. If you put all the data on the same channel it will switch off instruments but without the harsh clipping of CASIO's PCM. The 480 also has 99 primary instruments to choose from with 5 *tone banks* that can be edited. The HT has 480 cord or 00 note storage ability while the 480 has 5 cord and 5 melody banks with over 1000 notes each. All the banks in the 480 are composed of static RAM so memory is always retained regardless. You can even dump or load any of the banks back to your computer if it has a midi IN port on it. Just one unhappy note about the PSS-480, the documentation. It took sometime just to figure out this, and even longer to figure out how to get multiple instruments with their distinctive sounds to play. So I will save all of you some time and let you in on the secret. You have to put the keyboard in the Sound Sourcing Mode. The instructions tell you how to do this, but basically it is the mode in which no sound is emited from the keyboard when you try to play the keys. In it's default power up mode, it just acts like a monophonic, 1 voice (1 instrument)keyboard. But I was extremely surprised to find out the price $179.00. Most can be purchased on sale for about $159.00.

Warnings

Beware of keyboards toting the titles "TONE BANKS". They make claims of having 450 tones available. But the truth of the matter is that you only get those tones by combining the presets, usually a preset group of 20. The MIDI modes in these keyboards quite often deactive the tone bank feature and only leave you with the 20 presets. Also the percussion instrument on such keyboards usually do not correspond to any drum machines and are virtually useless except as tinkering items.

Always make sure that your future synth has a midi IN port. Many do not, such as midi guitars. Well, thats all for now. I will demo these two keyboards at our next West Side meeting if there is a call for it. Happy holidays!

Recently I obtained two programs which I will be of interest to those who are using the QL. The first is Spellbound. This is a program from the UK and one of several spell checkers for the QL. It will work with both the Quill and the Editor. I used the copy I had with the Editor. This program is very easy to use and configure, but it does require an expanded QL. Spellbound comes on a microdrive cartridge and is easily configured to disk. Spellbound loads a 30,00 word dictionary into memory before your word processor.

Once loaded it is turned on with a software switch or it can be left off until needed. There are five levels checking available to the user from a just a visual reminder to having the keyboard refuse input until the error is corrected. I found level 2 the best for me. It provided an audible signal with a visual check of the error.

I found it to be fast in checking and very unobtrusive. I did find some problems though. Because the spell checker comes from the UK, American spellings are not supported. Mostly these are words that are like colour which we spell color. This is easily modified and the UK spellings can be replaced with American ones or just appended to the dictionary. Slightly more serious is the list of 30,000 words, which don't seem to include quite a few of the words which I use. Also proper names of countries and major cities of the world are omitted. The saving grace is Spellbound's dictionary is easily modified. So far I have added nearly 200 words and probably will have to add more with each use. One other thing that when any curser key except back is used, Spellbound will turn off. It must be turned on again. It would be a bit better if it were not quite so easy to turn off.

Comparing Spellbound to some of the spellcheckers available for the clones, it comes off pretty well. It could use a larger dictionary, even Smith-Corona typewriters check about 50,000 words. English has one of the largest vocabularies of any language so 50,000 would be less than 20% of the several hundred thousands available. The cost of Spellbound is about $50. and it is available from dealers who handle QL software.

The next program is Mailbag available from EM software in Boston. This is essentially an overlay for the Archive program. Apparently the author took some time in writing it but not nearly enough to check for all bugs. The first problem I had was configuring the program for my system which has only one disk drive. It was difficult to get it running from one drive as the program would default periodically to flp2_ which doesn't exist on my system. After much struggle and usage of language which I reserve for working on broken automobiles, I was able to get the program running. It did what it claimed to do which was make an editable mail list to use with the Quill. I came across a problem when using a couple of the the print options and one was that the program would hang up. At this point I stopped testing the program. I should mention though that the author is available to answer questions and that I am not as familiar with his program as I should be. I get the feeling that Mailbag is a useful utility once you are familiar with it but overall it is not especially friendly.

To finish off this month is a list of some unusual BBS's that those of you who are into telecommunications might want to call. Have fun.

SOME SPECIAL INTEREST BBS'S

CUFON	206-722-5738
PHOTOCOM	415-752-5615
PICKHAM'S (POINT SPREAD ON SPORTING EVENTS)	213-613-0031
INVENTORS + AUTHORS BBS	817-430-3760
COLLECTORS NET	213-204-0646
LOONEYBIN (VIETNAM VETS BBS)	408-293-7894
73 RBBS	603-924-9809
ECONOMIC BBS	202-377-3870
* * * *	202-377-0433
POPULATION ESTIMATES BBS (TYPE "RUN" AT LOGON)	301-763-5225
CMIC BBS (CENSUS)	301-763-4576
MEIE BBS (MICRO USERS BY DEPT OF COMMERCE)	301-948-5718
CRYPTO BBS (18:30-7:30 EST MON-FRI,24 HRS WK ENDS)	703-237-4322
NEW TECH TIMES	608-263-2784
PYSCHIC CONSULTING	303-428-8177
ADS BBS	216-745-7855
CHIPS BBS (FIDO)	216-929-8483
GENEALOG (GENEALOGY)	614-488-4736
RADIO + ELECTRONICS BBS	516-293-2283
NOAA BBS	303-497-5000
CIME-ISE (MECH ENGRG BBS)	608-233-33
WCUE BBS (BIBLE ORIENTED)	216-923-9782
CATHOLIC INFO NET	415-387-3251
HARE KRISHNA BBS	312-743-7729
RATIONAL BBS (HUMANIST)	615-455-8623
JA CO BBS (JEWISH...24HRS EX SABBATH, PSWD=NEW)	718-854-6275
SEVEN RAY INSTITUTE (ASTROLOGY)	201-659-3263
AVIATOR'S EXCHANGE	707-546-4721
WORLD PEACE	303-320-4822
MARICOPA COUNTY SHERIFF	602-256-1609
FIRECOMM	216-666-0306
RAILNET (RAILROAD HOBBISTS)	216-883-6298
HAMNET	216-942-6382
F/8	216-235-9526
TELCOR CORP (YELLOW PAGES)	800-223-5541
BOISE POLICE BBS	208-323-8626
BROADCASTER'S BBS	602-934-4999
THE BETA RBBS (AUDIOPHILE)	213-393-9777
MEN INFO NETWORK (DIVORCE ETC)	813-785-3243
DEMO BBS (SOFTWARE DEMOS)	904-396-3064
TIME SCAN (AI ORIENTED)	318-396-9831
TRAVEL ONLINE	314-625-4054
US TELECOM SYSTEM (ASCII AND PRESTEL)	212-925-0843
HOST (HANDICAPPED & DISABLED)	518-793-9574
S&M EXCHANGE (ADULT, FEE)	401-944-4689
WORDWORKS (POLITICAL)	803-798-1225
FREE FORM (LEGAL)	313-774-725
ANARC (SWL BBS)	509-534-6866
THE DEAD BBS (GRATEFUL DEAD FANS)	717-677-9573

VOICE INFORMATION FOR PC PURSUIT IS 1-800-TELENET
THIS IS ONLY A VERY SMALL NUMBER OF BBS'S THAT EXIST AND MOST TELEPHONE NUMBERS ARE THOUGHT TO BE CURRENT AS OF 3/17/88

HERE ARE A FEW PEOPLE FROM THE '88 MIDWEST COMPUTER CONFERENCE. SEE IF YOU CAN RECOGNIZE THEM ALL. NAMES IN THE NEXT ISSUE.

If you would like to subscribe to the RAMTOP please fill out this form and send it to the listed address along with a check for: $15/Year or $7.50/ 6 mo. to become a member of our Group (Attend meetings, use library tapes Ect.) Please make checks payable to the RAMTOP! (The phone # is only for our records!) This INCLUDES useage of our TIMELINES BBS! (216-671-6922, 8-N-1) Times of useage are 10PM to 6AM (EST) 7 days a week.

****

Please print! Enclosed: $_____ for 1 year__ / 6 months__

NAME: _____ PHONE: _____-_____-_____

STREET: _____ We need your phone # for our records!

CITY: _____ STATE: _____ ZIP: _____

Type of computer(s) and peripheral(s) you own: _____

_____

THANK YOU for your interest! Please send to:

Robert Parish, 12706 Leeila Ave., Cleveland, OH 44135

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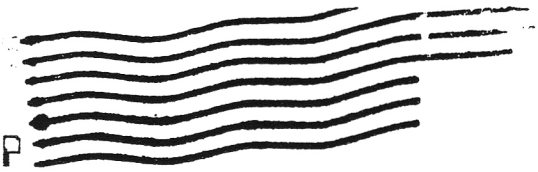

From:
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89/05/16

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44144

FIRST CLASS MAIL